

AMENDMENT

Please amend the above captioned application as follows:

In the Specification:

Please amend the specification as shown in Attachment "A".

REMARKS

Claims 1-95 are pending in the application and are presented for reconsideration and further examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action the drawings were objected to; the specification was objected to; claims 1-9, 11-20, 22-31, 33-42, 44-53, 55-64, and 66-86 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,233,684 to Stefik et al. in view of U.S. Patent No. 5,157,726 to Merkle et al.; claims 10, 21, 32, 43, 54, and 65 were rejected under 35 U.S.C. § 103(a) as obvious over the Stefik et al. '684 patent in view the Merkle et al. '726 patent further in view of U.S. Patent No. 6,237,096 to Bisbee et al.; claims 87, 89-92, and 94-95 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 4,981,370 to Dziewit et al. in view of U.S. Patent No. 4,467,139 to Mollier; claim 91 was rejected under 35 U.S.C. § 103(a) as obvious over the Dziewit et al. '370 patent in view of the Mollier '139 patent further in view of U.S. Patent No. 5,677,955 to Doggett et al.;

claim 93 was rejected under 35 U.S.C. § 103(a) as obvious over U.S. the Dziewit et al. '370 patent in view of the Mollier '139 patent further in view of the Merkle et al. '726 patent; and claim 88 was objected to as being dependent on a rejected base claim.

By this Response and Amendment the specification is amended to overcome the objections to the drawings and specification, other than the objection set forth in paragraph 3 of the office action; and the prior art rejections are traversed and arguments in support thereof are provided.

The amendments to the specification, other than at page 17, lines 25-26, are of a typographical nature and support therefor is found in the originally filed specification and drawings. Support for the amendment at page 17, lines 25-26 is found in the originally filed drawing of Fig. 3. It is therefore respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. § 132.

Drawing Objections

The Examiner objected to the drawings for including reference signs "234" and "244" not mentioned in the specification.

RESPONSE

The specification has been amended at page 17, lines 24-26 to add reference signs "234" and "244". Support for the addition of

reference sign "234" and for the added sentence that includes reference sign "244" is found in the originally filed drawing of Fig. 2. Accordingly, reconsideration and withdrawal of the objections is respectfully requested.

Objections to the Specification

The Examiner objected to the specification for having typographical errors with respect to reference signs "644" at page 31, line 28; "910" at page 35, line 6; "910" at page 36, line 17; "920" at page 37, line 9; and suggested keeping the same label for the object "854" in Fig. 8 to avoid confusion with "Verification Result (644)" in Fig. 6.

RESPONSE

Applicants thank the Examiner for the suggested corrections. Applicants have amended the specification to correct the typographical errors noted in paragraph 2 of the Office Action as suggested by the Examiner thereby overcoming the noted objections.

Accordingly, reconsideration and withdrawal of the objections is respectfully requested.

With respect to the Examiner's suggestion in paragraph 3 of the Office Action, Applicants respectfully submit that they do not understand the Examiner's objection and therefore are unable to more fully respond thereto. Applicants respectfully ask the

Examiner to clarify the objection so that Applicants can consider any necessary changes.

Rejections Under 35 U.S.C. § 103

claims 1-9, 11-20, 22-31, 33-42, 44-53, 55-64, and 66-86 were rejected as obvious over the Stefik et al. '684 patent in view of the Merkle et al. '726 patent; claims 10, 21, 32, 43, 54, and 65 were rejected as obvious over the Stefik et al. '684 patent in view of the Merkle et al. '726 patent further in view of the Bisbee et al. '096 patent; claims 87, 89-92, and 94-95 were rejected as obvious over the Dziewit et al. '370 patent in view of the Mollier '139 patent; claim 91 was rejected as obvious over the Dziewit et al. '370 patent in view of the Mollier '139 patent further in view of the Doggett et al. '955 patent; and claim 93 was rejected as obvious over U.S. the Dziewit et al. '370 patent in view of the Mollier '139 patent further in view of the Merkle et al. '726 patent.

RESPONSE

Applicants respectfully traverse the rejections.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim

limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Stefik et al. (US Patent 6,233,684)

in view of Merkle et al. (US Patent 5,157,726)

The Examiner rejected claims 1 to 9, 11 to 20, 22 to 31, 33 to 42, 44 to 53, 55 to 64, and 66 to 86 under 35 U.S.C. 103(a) as being unpatentable over Stefik et al. (US Patent 6,233,684) in view of Merkle et al. (US Patent 5,157,726). With respect, Applicants must disagree with the Examiner's objections for reasons as set out below.

Claim 1: Stefik et al. describes a rendering system for controlling the distribution and use of digital works. In particular, it is aimed at addressing the risk of unauthorized copying of digital documents, which, comes from three main sources: interception of digital copies when they are transmitted; unauthorized use and rendering of digital copies that are remotely stored; and unauthorized copying of a rendered digital work. Distribution and use of digital works, as described in this document, uses a watermark containing dynamically generated watermark information, the watermark being embedded in a rendered output. The watermark data is exemplified as providing information relating to the owner of the digital work, rights associated with the rendered copy of a digital work and when and where the digital

work was rendered. Figure 10 indicates the type of contents of such a watermark.

The Examiner cited column 10, lines 50 to 51 and discusses Stefik et al. as disclosing various features, which are claimed in the present application, for instance in claim 1. However, what is, in particular, not clear to us what is feature of Stefik et al. the Examiner considers as teaching (whether implicitly or explicitly) that a content digest is embedded in the optically sensitive glyph. We agree that Stefik et al. mentions document identification and fingerprint data can be embedded in a watermark and Figure 10 shows the use of a title, author and copyright notice as the watermark information. Column 1, lines 55 to 60 defines a fingerprint mark as a mark that carries information about the end user or rendering event rather than the document or publisher. However, neither of these is a content digest as is claimed, which can be understood from the description of the present application.

Claim 1 relates to protecting the legitimacy of an electronic document, for instance using authentication and content integrity of the document. It involves the content, a digest of the content, seals and using an optically sensitive component. The objective of Stefik et al. is copyright and usage protection, which does not care about content integrity or authenticity.

In the case of Merkle et al., this describes a system for authenticating a hard copy of an original document. A digital signature is generated for a document and then affixed to the hard copy produced by a signing copier machine.

An important feature of Merkle et al. is that the digital

signature is added to the hard copy. It is not an electronic document containing the signature, and claim 1 relates to an electronic document. As such, we cannot agree with the Examiner's conclusion that a combination of Merkle et al. and Stefik et al. would lead to the features of claim 1. If the teaching of these two documents could be combined, then it would be the document as generated by Stefik et al. that would be input as document 20 in Figure 2 of Merkle et al. Whilst the signed document 35 might include a signature 36, it would not be as an electronic document.

On the other hand, even if the signature from a Merkle et al. were added to an electronic document, it would not be "an electronic document for reproduction of a corresponding printed document" as present claim 1 requires since, as is quite clear from Figure 2 of Merkle et al., the signature 36 is only there during transmission and the document that is ultimately desired is the digitally clean document 40, produced by the second signing copier 25, which document 40 lacks the signature 36.

Further, the signature discussed in Merkle et al. is only intended for use in transmission of the document, but is not intended to form part of the document itself. If it were deemed obvious to transmit the document of Merkle et al. in an electronic form, then from the teaching of Merkle et al., there would be no point to an optically sensitive component in the document during such transmission. Since the transmission would be electronic there would not need to be any check against copying of a printed original. There is certainly no suggestion whatsoever of generating the document in electronic form with the signature and

then printing it.

The Examiner indicated that it would be obvious for a signature taught by Merkle et al. to be included in the glyph of Stefik et al. However, whilst it may indeed be possible to combine a signature with a glyph, the requirement of claim 1 is that the e-seal includes a visible seal of an authority and the content digest embedded in the visible seal. Any combination of a glyph as shown in Stefik et al. and a signature would not appear to result in a visible seal of an authority.

Thus, the combination of the features of Stefik et al. and Merkle et al. would not lead to what is claimed. Moreover, it is not clear that the skilled person would even have any reason for seeking to combine what is taught, given that Stefik et al. is directed to allowing distribution but controlling it to ensure fees are paid, whilst Merkle et al. is directed to ensuring authentication within a printed document. There is no apparent overlap or synergy that would lead the skilled person even to consider the two documents together. Claim 1 is therefore asserted to be patentable over the cited references. Claims 2-11, dependent from claim 1, are asserted to be patentable over the cited references for at least the same reasons that claim 1 is patentable thereover.

Claim 2: Regarding claim 2, Applicants agree that Stefik et al. mentions that document identification and fingerprinting data can be embedded in a watermark. However, neither a title alone (with copyright information) or a fingerprint is itself a content

digest.

Claim 3: Regarding claim 3, whilst Stefik et al. does mention that the original data is compressed prior to glyph encoding, Stefik et al. does not teach that this ``original data'' is a content digest. Moreover, data compression is distinct from data encryption. Data compression, which is what is taught in Stefik et al., involves reducing the space needed for the data. Data encryption, which is what is required in claim 3, involves making the data unreadable to others.

Claim 4: Regarding claim 4, yes Stefik et al. at column 13, lines 51 to 52 does state that "the location of the watermark and the corresponding embedded data is then found". However, there is no indication whatsoever that the embedding address of the watermark is the key for encrypting any data, as the Examiner objects. The Examiner indicates that this is implicit, but we cannot agree. There is no mention of encryption within Stefik et al., only that data may be compressed (and there is no specific disclosure of reading the embedded data in such a case). Further, even if there were some form of encryption, there is nothing that indicates a link between an embedding address and a key. Given the use of the singular verb ``is'' in the sentence ``the location of the watermark and the corresponding embedded data is then found, step 1302'' means that a singular location contains both the watermark and the corresponding embedded data. It is not possible from this statement to derive anything to the effect that the

embedding address of watermark is used as a key for embedded data.

Claim 5: Regarding claim 5, the Examiner indicated that the fingerprint in Stefik et al. is a content digest. Given that a content digest is a digest of the content of the original document (according to claim 1), we do not understand how this can be a fingerprint, when Stefik et al., at column 1, lines 55 to 60, specifically defines a fingerprint as carrying information about the end user or rendering event rather than the document or publisher. This completely contradicts the interpretation that the fingerprint is a content digest.

Claim 6: Regarding claim 6, not only does Stefik et al. not teach a content digest, but Merkle et al. does not teach block wise digest derivation of a content digest. Merkle et al., at column 3, lines 21 to 25, does indeed mention that the stream of digital information representing the document content can be subjected to a hashing algorithm, but this does not necessarily mean that there is a block wise digest derivation. Moreover, there are other features of claim 6 relating to block size and labels, which are also absent from Merkle et al. As such, even if Merkle et al. and Stefik et al. were combined as suggested by the Examiner, the combination would still not teach the features of claim 6.

Claim 8: Regarding claim 8, whilst Stefik et al., at column 10, lines 11 to 15, may indeed mention using some print patterns on the page which tend to be distorted by photocopiers and scanners,

there is no indication that the pattern should contain specific data. Moreover, there is no teaching of the use of a serial number. The Examiner has simply asserted that it would be obvious to provide the features from claim 8. However, without any teaching from Stefik et al. or other cited prior art to this affect, we cannot agree with this.

Claim 9: Regarding claim 9, this requires at least two or more pages and multi media information in the content and one or more landmarks. Stefik et al., at column 11, lines 7 to 10, mentions that the document designer must be able to specify the position and shape of watermark. However, that could simply be by means of an absolute position from anywhere, such as the top or bottom of the document without necessarily requiring the presence of a landmark.

Claim 11: Regarding claim 11, the Examiner has referred to a reference to prior art within Stefik et al., at column 2, lines 34 to 35. However, the question of the obviousness of a claim cannot rely simply upon finding documents that potentially convey the prior existence of each of the separate components mentioned in the claim. There must be some obviousness in the combination that may be required. In this case, the important feature about the prior art ``Digimarc watermark'' is that it is invisible. This contrasts with the watermark of Stefik et al. The whole purpose about the watermark of Stefik et al. is for it to be visible perceptible and to convey ownership information relating to an image. The first

main requirement of the watermark, according to Stefik et al., at column 10, lines 1 to 5, is that it provides a social reminder, in the form of "a visible printed indication about whether photocopying is permitted". These two teaching are therefore at odds with each other and there is no suggestion within Stefik et al. that they might in fact be combined in any way.

With regard to the rejections of independent claims 12, 23, 34, 45, and 56, Applicants incorporate herein by reference the arguments presented above in response to the rejection of claim 1 and respectfully submit that claims 12, 23, 34, 45, and 56 are patentable over the cited references for the same reasons.

With regard to the rejections of dependent claims 13-20 and 22; 24-31 and 33; 35-42 and 44; 46-53 and 55; and 57-64 and 68, Applicants further incorporate herein by reference the arguments presented above in response to the corresponding rejections of claims 2-9 and 11 and respectfully submit that claims 13-20 and 22; 24-31 and 33; 35-42 and 44; 46-53 and 55; and 57-64 and 68 are patentable over the cited references for the same reasons. Claims 66-67, dependent from claim 56, are asserted to be patentable for at least the same reasons that claim 56 is patentable.

Claim 69: Regarding claim 69, as discussed earlier with the respect to claim 1, the combination of Stefik et al. and Merkle et al. would not lead to an e-seal including a visible seal of authority and a content digest embedded in the e-seal. These features are also required claim 69. Further, Merkle et al. fails

to teach the generation of an authenticated electronic document. The documents generated in Merkle et al. are printed versions. Whilst Merkle et al. may teach checking whether the signature on a printed document corresponds to information from the document itself and whether it matches with a public key, that is not verifying the legitimacy of an authenticated electronic document. Claim 69 is therefore asserted to be patentable over the cited references. Claims 70-74, dependent from claim 69, are asserted to be patentable over the cited references for at least the same reasons that claim 69 is patentable thereover.

Claim 70: Regarding claim 70, even if what is described in Merkle et al. were indeed verification as claimed in claim 69, then it is achieved by comparing the digital signature against a signature obtained directly from the original document. There is no suggestion in Merkle et al. of verifying a digest content against the corresponding e-seal, nor is there so in Stefik et al.

Claim 74: Regarding claim 74, whilst Stefik et al. may indeed discuss extracting data, decoding it to identify from whom an unauthorized reproduction of a digital work came. However, there is no disclosure specifically of means for visually inspecting, means for scanning, nor means for verifying the optically sensitive component. Whilst there may be means for extracting data from the watermark, there is no discussion of means for extracting content digest from the watermark, nor would one be expected as Stefik et al. fails to teach the use of a content digest. Further, the

extracted embedded data in Stefik et al. is not verified as such but is merely read to determine an identity and place, according to column 13, lines 60 to 62.

In response to the rejections of independent claims 75 and 81, Applicants incorporate herein by reference the arguments presented above in response to the rejection of claim 69 and respectfully submit that claims 75 and 81 are patentable over the cited references for the same reasons. Applicants further incorporate herein by reference the arguments presented above in response to the rejections of claims 71-74 and respectfully submit that claims 76-80 and 82-86 are patentable over the cited references for the same reasons.

Stefik et al. (US Patent 6,233,684)

in view of Merkle et al. (US Patent 5,157,726)

further in view of Bisbee et al. (US Patent 6,237,069)

The Examiner rejected claims 10, 21, 32, 43, 54 and 65 under 35 U.S.C. 103(a) as being unpatentable over Stefik et al. in view of Merkle et al. as applied to claim 1 and further in view of Bisbee et al. (US Patent 6,237,069).

The Examiner cited column 3, lines 20 to 29 of Bisbee et al. as disclosing the presence of a second e-seal. However, there is nothing in that cited portion to suggest that executing a transaction involves the generation of a second e-seal, in particular the generation of a second e-seal whose contents

includes the content of the original document and the first e-seal. The Examiner cited column 3, lines 20 to 29, of Bisbee et al., which is a portion of the "summary". However, neither that nor the portion of the main description, at column 12, line 49 to column 13, line 23, that corresponds to and elucidates the cited portion describes the claimed features. The objects described in Bisbee et al. may well contain a first digital signature of a first party, a first certificate relating the identity of the first party, a digital signature of a trusted repository and a second certificate applied by the trusted repository (see claim 1 of Bisbee et al.). However, there is nothing in Bisbee et al. that indicates a second e-seal including content of the original document and the first e-seal.

Further, it should be noted that Bisbee et al., for instance as is mentioned in the abstract, is useful for providing paperless commercial transactions. Therefore the person skilled in the art that wishes to generate an electronic document whose purpose is to be printed (as is the purpose of the electronic document of claim 1, on which claim 10 is dependent) is not going to be turning to the teaching of Bisbee et al. Bisbee et al., at column 12, lines 61 to 64, specifically mentions that the information object in the example is electronic and that secure electronic means are used to transmit the object and its instructions. Thus it would not be obvious to consider Bisbee et al. together with Merkle et al. and Stefik et al., nor, in particular, to combine the teaching of Bisbee et al. with the teachings of these other two documents to provide the features of claim 10.

Likewise, it would not be obvious to provide the features of any of claims 21, 32, 43, 54 and 65, using the teaching of Bisbee et al., Merkle et al. and Stefik et al. Claims 10, 21, 32, 43, 54 and 65 are therefore asserted to be patentable over the cited references.

Dziewit et al. (US Patent 4,981,370)

in view of Mollier (US Patent 4,467,139)

The Examiner rejected claims 87, 89 to 92 and 94 to 95 under 35 U.S.C. 103(a) as being unpatentable over Dziewit et al. (US Patent 4,981,370) in view of Mollier (US Patent 4,467,139).

Claim 87: The process described in Dziewit et al. is a process aimed at allowing two parties to sign a contact simultaneously using digital signatures. For both parties the document is to be identical. However, there is no mention of protecting the legitimacy of the signed document in an electronic form as is required by claim 87. In particular, there is no mention or any content digest or an electronic seal, which includes a visible seal of an authority, with the content digest embedded in the visible seal.

Further, the Examiner cited column 11, lines 18 to 21 as showing the feature of sending a protected, signed electronic document to a receiving party. However, this portion of the description relates to step 317 of Figure 4. If one follows Figure 4 through to Figure 5, the Examiner will see that the digital

signature is not generated until step 326. Thus what is sent between the parties is not the signed electronic document but the basic electronic document before signature. The only time the signed electronic document is transmitted is in step 328, where it is transmitted to all parties. If the final archived file is transmitted to all parties, there is not going to be a need for any receipt to be sent to one of them.

Moreover, the only type of signature useable in Dziewit et al. is an electronic signature. Column 2, lines 51 and 52 specifically mention that no paper document version of the electronic contract need be produced. On the other hand, claim 87 requires the signature of an original document. For paper original documents, Dziewit et al. teaches away from what is claimed in claim 87. Claim 87 is therefore asserted to be patentable over the cited references. Claims 89-95, dependent from claim 87, are asserted to be patentable over the cited references for at least the same reasons that claim 87 is patentable thereover.

Claim 89: Regarding claim 89, the Examiner indicated that Dziewit et al. teaches a third party assigning a trust statement to the document and delivering a trusted copy of the document to the recipient. However, there is nothing in the portion cited by the Examiner, at column 13, lines 8 to 26, that teaches that the third party trustee assigns a trust statement to the document. It merely mentions that a third party is the repository for the document authentication software and the file ``contract'', and that the third party controls the communication connections.

Dziewit et al. (US Patent 4,981,370)
in view of Mollier (US Patent 4,467,139)
further in view of Merkle et al. (US Patent 5,157,726)

The Examiner rejected claim 93 under 35 U.S.C. §§ 103(A) as being unpatentable over Dziewit et al. in view of Mollier, and further in view of Merkle et al.

Claim 93: Regarding claim 93, the Examiner mentions that Dziewit et al. in view of Mollier fails to teach converting a printed original document to electronic format. Not only that, but Dziewit et al. in view of Mollier fails to teach the provision of a printed document at all. Dziewit et al. makes it quite clear, at column 2, lines 51 and 52, that no paper document version of the electronic contract need be produced. Further, given this and that Merkle et al. relates solely to printing and transmitting printed documents, the skilled person would not be inclined in the least to combine what is taught there with what is taught in Dziewit et al. As such, it would not be obvious to combine the teaching at all, let alone as the Examiner has indicated. Claim 93 is therefore asserted to be patentable.

Allowable Subject Matter

Claim 88 was indicated as being allowable if rewritten in independent form to include the limitations of the base claim and

intervening claims.

RESPONSE

The Examiner's indication of allowable subject matter is noted with appreciation. Nevertheless, in view of the arguments presented above, Applicants respectfully decline to rewrite claim 88 in independent form and respectfully submit that claim 88, dependent form claim 87, is currently patentable for the same reason that claim 87 is patentable over the cited references and for the additional reasons indicated by the Examiner.

MISCELLANEOUS

The references cited by the Examiner have been reviewed and it is submitted that the claims as originally presented and as herein resubmitted without amendment are patentable thereover.

CONCLUSION

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Attorney Docket No. 82231

Respectfully submitted,

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